WHAT IS CLAIMED IS:

1.   An audio information processing device comprising:

a subband dividing section dividing inputted audio information including a sound signal into a plurality of frequency bands;

a scaling section calculating a scaling factor, which indicates a multiplying power to a reference value, of each subband divided by the subband dividing section into each of the frequency bands, and aligning each dynamic range; and

a coding processing section compressing and coding an output signal from the scaling section by using a MPEG system to output as coded bit stream data; further including

a feature detection processing section extracting features of the audio information on the basis of the scaling factors outputted from the scaling section.

2.   The audio information processing device as claimed in claimed 1, wherein the feature detection processing section includes a means of determining whether or not the audio information is of a voice signal interval on the basis of the scaling factors.

3.   The audio information processing device as claimed in claim 1, wherein the feature detection processing section includes a means of determining whether or not the audio information is of a soundless signal interval on the basis of the scaling factors.

4.   An audio information processing device comprising:

a subband dividing section dividing inputted audio information including a sound signal into a plurality of frequency bands;

a scaling section calculating a scaling factor, which indicates a multiplying power to a reference value, of each subband divided by the

subband dividing section into each of the frequency bands, and aligning each dynamic range; and

a coding processing section compressing and coding an output signal from the scaling section by using a MPEG system to output as
10   coded bit stream data; further including:

a feature detection processing section extracting features of the audio information on the basis of the scaling factors outputted from the scaling section; and

a signal level calculating section inputting thereto the scaling
15   factor of each subband outputted from the scaling section, and calculating a signal level corresponding to the scaling factor; wherein

the feature detection processing section extracts features of the audio information on the basis of the signal levels calculated by the signal level calculating section.

5.   The audio information processing device as claimed in claim 4, wherein:

the signal level calculating section inputs thereto the scaling factors in low-frequency bands outputted from the scaling section within
5   a predetermined period of time to calculate the signal levels; and

the feature detection processing section comprises:

a calculating means of finding a maximum value and a minimum value of the signal levels calculated by the signal level calculating section, and calculating a difference between the maximum
10   value and the minimum value; and

a determining means of, when the difference value calculated by the calculating means is greater than or equal to a predetermined threshold value, determining that the audio information is of a voice signal interval, on the other hand, when the difference value is less than
15   the threshold value, determining that the audio information is of a signal

interval except for voice.

6. The audio information processing device as claimed in claim 4, wherein:

the signal level calculating section inputs thereto all of the scaling factors outputted from the scaling section within a predetermined period of time to calculate the signal levels; and

the feature detection processing section includes a determining means of, when the signal levels calculated by the signal level calculating section are greater than or equal to a predetermined threshold value, determining that the audio information is of a sound signal interval, on the other hand, when the signal levels are less than the threshold value, determining that the audio information is of a soundless signal interval.

7. An audio information processing device comprising:

a stream dividing section, after inputting thereto bit stream data coded by a MPEG system, dividing the coded bit stream data composed of each subband divided into each frequency band into bit assigning information, a scaling factor value indicating a multiplying power to a reference value, and coded data in units of each subband; and

a decoding processing section executing a decoding process to the coded data divided by the stream dividing section in units of each subband to output as audio information; further including

a feature detection processing section extracting features of the audio information on the basis of the scaling factor values outputted from the stream dividing section.

8. The audio information processing device as claimed in claim 7, wherein the feature detection processing section includes a means of determining whether or not the audio information is of a voice

signal interval on the basis of the scaling factor values.

9.   The audio information processing device as claimed in claim 7, wherein the feature detection processing section includes a means of determining whether or not the audio information is of a soundless interval on the basis of the scaling factor values.

10.   An audio information processing device comprising:

a stream dividing section, after inputting thereto bit stream data coded by a MPEG system, dividing the coded bit stream data composed of each subband divided into each frequency band into bit assigning information, scaling factor value indicating a multiplying power to a reference value, and coded data in units of each subband; and

a decoding processing section executing a decoding process to the coded data divided by the stream dividing section in units of each subband to output as audio information; further including:

a feature detection processing section extracting features of the audio information on the basis of the scaling factor values outputted from the stream dividing section; and

a signal level calculating section inputting thereto the scaling factor of each subband outputted from the stream dividing section to calculate a signal level; wherein

the feature detection processing section extracts features of the audio information on the basis of the signal levels calculated by the signal level calculating section.

11.   The audio information processing device as claimed in claim 10, wherein:

the signal level calculating section inputs thereto the scaling factors in low-frequency bands outputted from the stream dividing

5   section within a predetermined period of time to calculate the signal levels; and

the feature detection processing section comprises:

a calculating means of finding a maximum value and a minimum value of the signal levels calculated by the signal level

10 calculating section, and calculating a difference between the maximum value and the minimum value; and

a determining means of, when the difference value calculated by the calculating means is greater than or equal to a predetermined threshold value, determining that the audio information is of a voice

15 signal interval, on the other hand, when the difference value is less than the threshold value, determining that the audio information is of a signal interval except for voice.

12.   The audio information processing device as claimed in claim 10, wherein:

the signal level calculating section inputs thereto all of the scaling factors outputted from the stream dividing section within a

5   predetermined period of time to calculate the signal levels; and

the feature detection processing section includes a determining means of, when the signal levels calculated by the signal level calculating section are greater than or equal to a predetermined threshold value, determining that the audio information is of a sound signal interval, on

10 the other hand, when the signal levels are less than the threshold value, determining that the audio information is of a soundless signal interval.

13.   An audio information processing method, in an audio information processing device comprising:

a subband dividing section dividing inputted audio information including a sound signal into a plurality of frequency bands;

5   a scaling section calculating a scaling factor, which indicates a multiplying power to a reference value, of each subband divided by the subband dividing section into each of the frequency bands, and aligning each dynamic range; and

a coding processing section compressing and coding an output

10   signal from the scaling section by using a MPEG system to output as coded bit stream data; including

a first step of extracting features of the audio information on the basis of the scaling factors outputted from the scaling section.

14.   The audio information processing method as claimed in claim 13, wherein the first step further includes a second step of determining whether or not the audio information is of a voice signal interval on the basis of the scaling factors.

15.   The audio information processing method as claimed in claim 13, wherein the first step further includes a third step of determining whether or not the audio information is of a soundless signal interval on the basis of the scaling factors.

16.   An audio information processing method, in an audio information processing device comprising:

a subband dividing section dividing inputted audio information including a sound signal into a plurality of frequency bands;

5   a scaling section calculating a scaling factor, which indicates a multiplying power to a reference value, of each subband divided by the subband dividing section into each of the frequency bands, and aligning each dynamic range; and

a coding processing section compressing and coding an output

10   signal from the scaling section by using a MPEG system to output as

coded bit stream data; including:

a first step of extracting features of the audio information on the basis of the scaling factors outputted from the scaling section; and

a fourth step of inputting the scaling factor of each subband outputted from the scaling section, and calculating a signal level corresponding to the scaling factor; wherein

the first step further includes a fifth step of extracting features of the audio information on the basis of the signal levels calculated in the fourth step.

17.   The audio information processing method as claimed in claim 16, wherein:

the fourth step further includes a sixth step of inputting the scaling factors in low-frequency bands outputted from the scaling section within a predetermined period of time to calculate the signal levels; and

the fifth step further includes:

a seventh step of finding a maximum value and a minimum value of the signal levels calculated at the sixth step, and calculating a difference between the maximum value and the minimum value; and

an eighth step of, when the difference value calculated at the seventh step is greater than or equal to a predetermined threshold value, determining that the audio information is of a voice signal interval, on the other hand, when the difference value is less than the threshold value, determining that the audio information is of a signal interval except for voice.

18.   The audio information processing method as claimed in claim 16, wherein:

the fourth step further includes a ninth step of inputting all of the scaling factors outputted from the scaling section within a

5   predetermined period of time to calculate the signal levels; and

the fifth step further includes a tenth step of, when the signal levels calculated at the ninth step are greater than or equal to a predetermined threshold value, determining that the audio information is of a sound signal interval, on the other hand, when the signal levels

10   are less than the threshold value, determining that the audio information is of a soundless signal interval.

19.   An audio information processing method, in an audio information processing device comprising:

a stream dividing section, after inputting thereto bit stream data coded by a MPEG system, dividing the coded bit stream data

5   composed of each subband divided into each frequency band into bit assigning information, a scaling factor value indicating a multiplying power to a reference value, and coded data in units of each subband; and

a decoding processing section executing a decoding process to the coded data divided by the stream dividing section in units of each

10   subband to output as audio information; including

an eleventh step of extracting features of the audio information on the basis of the scaling factor values outputted from the stream dividing section.

20.   The audio information processing method as clamed in claim 19, wherein the eleventh step further includes a twelfth step of determining whether or not the audio information is of a voice signal interval on the basis of the scaling factor values.

21.   The audio information processing method as claimed in claim 19, wherein the eleventh step further includes a thirteenth step of determining whether or not the audio information is of a soundless

interval on the basis of the scaling factor values.

22.   An audio information processing method, in an audio information processing device comprising:

a stream dividing section, after inputting thereto bit stream data coded by a MPEG system, dividing the coded bit stream data

5   composed of each subband divided into each frequency band into bit assigning information, a scaling factor value indicating a multiplying power to a reference value, and coded data in units of each subband; and

a decoding processing section executing a decoding process to the coded data divided by the stream dividing section in units of each

10   subband to output as audio information; including:

an eleventh step of extracting features of the audio information on the basis of the scaling factor values outputted from the stream dividing section; and

a fourteenth step of inputting the scaling factor of each

15   subband outputted from the stream dividing section to calculate a signal level; wherein

the eleventh step further includes a fifteenth step of extracting features of the audio information on the basis of the signal levels calculated by the fourteenth step.

23.   The audio information processing method as claimed in claim 22, wherein:

the fourteenth step further includes a sixteenth step of inputting the scaling factors in low-frequency bands outputted from the

5   stream dividing section within a predetermined period of time to calculate the signal levels; and

the fifteenth step further includes:

a seventeenth step of finding a maximum value and a

minimum value of the signal levels calculated at the sixteenth step, and

10   calculating a difference between the maximum value and the minimum value; and

an eighteenth step of, when the difference value calculated at the seventeenth step is greater than or equal to a predetermined threshold value, determining that the audio information is of a voice

15   signal interval, on the other hand, when the difference value is less than the threshold value, determining that the audio information is of a signal interval except for voice.

24.   The audio information processing method as claimed in claim 22, wherein:

the fourteenth step further includes a nineteenth step of inputting all of the scaling factors outputted from the stream dividing

5   section within a predetermined period of time to calculate the signal levels; and

the fifteenth step further includes a twentieth step of, when the signal levels calculated at the nineteenth step are greater than or equal to a predetermined threshold value, determining that the audio

10   information is of a sound signal interval, on the other hand, when the signal levels are less than the threshold value, determining that the audio information is of a soundless signal interval.